# LESA ASSESSMENT LAUREL SOLAR PROJECT

(T16S, R12E, S26, SBB&M)

# IMPERIAL COUNTY, CALIFORNIA

May 2017

EMA Report No. 2377-01

Prepared for:

90FI 8me LLC 111 Woodmere Road, Suite 250 Folsom, CA 95630



#### LAND EVALUATION AND SITE ASSESSMENT MODEL

## LAUREL SOLAR PROJECT (T16S, R12E, S26, SBB&M) IMPERIAL COUNTY, CALIFORNIA

The Land Evaluation and Site Assessment (LESA) model is an approach for rating the relative quality of land resources based upon specific measurable features. The LESA model was first developed by the federal Natural Resources Conservation Service (NRCS) in 1981. It was subsequently adapted in 1990 by the California Department of Conservation to evaluate land use decisions that affect the conversion of agriculture lands in California. The formulation of the California LESA Model is intended to provide lead agencies under the California Environmental Quality Act (CEQA) with an optional methodology to ensure that significant effects on the environment of agricultural land conversions are quantitatively and consistently considered in the environmental review process.

For determining the potential CEQA significance resulting from the conversion of agricultural lands to some other purpose, the California Agricultural LESA Model has developed Scoring Thresholds which are used to compare the Final LESA Score and the Weighted Factor Scores for the Project with suggested Scoring Decisions. These LESA Scores do not take into consideration any proposed mitigation measures or other factors that might affect a lead agency's determination of the significance of the agricultural lands conversion impact under CEQA.

The information provided on the following pages present documentation of the LESA assessment prepared using the California Agricultural LESA Model for the Laurel Solar Project (Project) (APNs 051-310-023, 051-360-005). The proposed Laurel Solar Project would be constructed on approximately 171 acres of privately owned land located approximately 10 miles Southwest of El Centro, east of the Derrick Road, bisected by West Diehl Road, and west and north of the Campo Verde Solar Project (Figure 1 and Figure 2).

# LESA ASSESSMENT

# LAUREL SOLAR PROJECT IMPERIAL COUNTY, CALIFORNIA

# TABLE OF CONTENTS

		<u>Page</u>
SUMM	ARY	i
LIST O	F FIGURES	ii
LIST O	F APPENDICES	ii
1. CAI A B C D E F G	LIFORNIA LAND EVALUATION AND SITE ASSESSMENT MODEL  LAND CAPABILITY CLASSIFICATION ("LCC")  STORIE INDEX RATING  PROJECT SIZE RATING  WATER RESOURCES AVAILABILITY RATING  SURROUNDING AGRICULTURAL LAND RATING  SURROUNDING PROTECTED RESOURCE LAND RATING  WEIGHTING OF FACTORS AND FINAL LESA SCORE  LIST OF FIGURES	3 5 6 7
		<u>Page</u>
Figure 2 Figure 3	: Location Map	2 4
	I IST OF APPENDICES	

#### LIST OF APPENDICES

APPENDIX A: LAUREL SOLAR PROJECT SOILS DETAILS

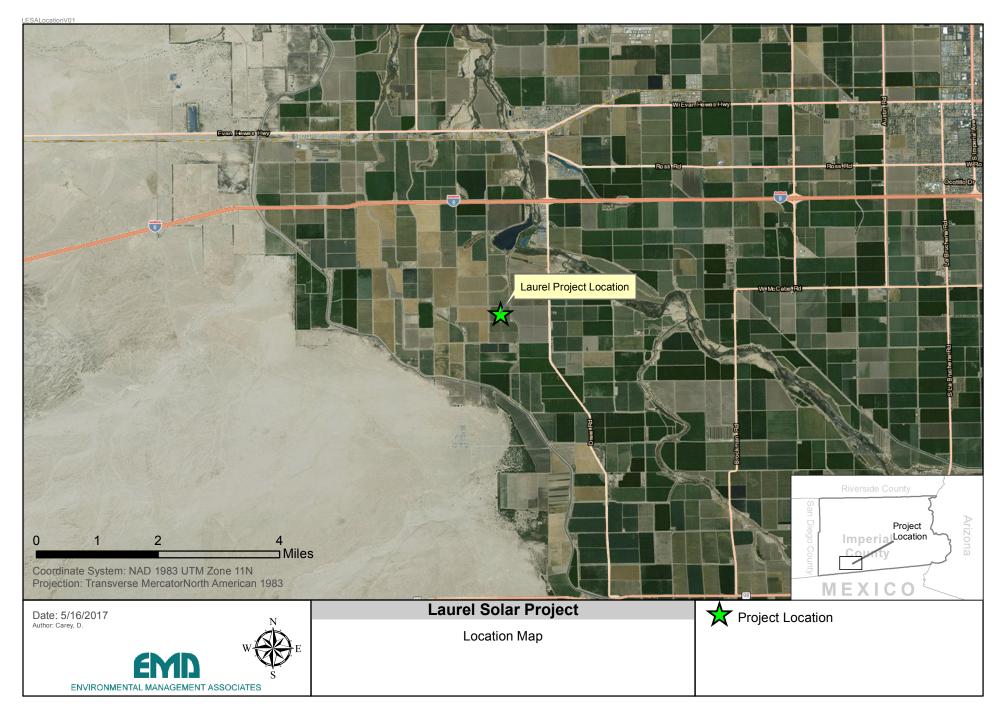


Figure 1: Location Map

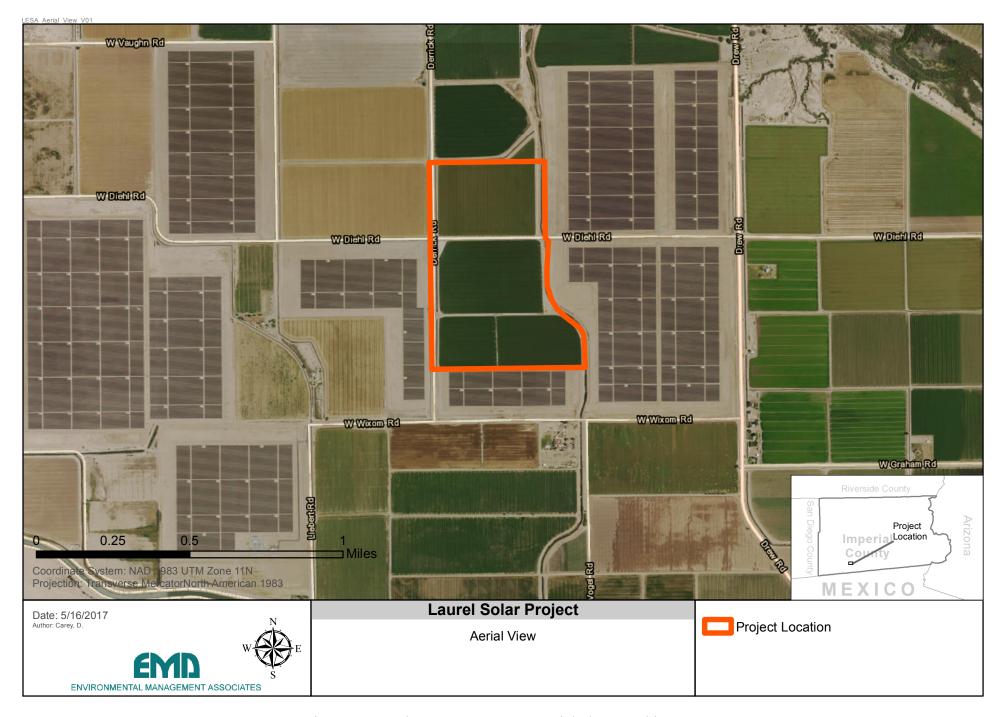


Figure 2 : Development Area on an Aerial Photographic Base

Land Evaluation Worksheet										
A B C D E F G										
Soil Map Unit*	Project Acres	Proportion of Project Area	LCC** (irrigated)	LCC Rating (irrigated)***	LCC Score (C x E)	Storie Index**	Storie Index Score (C x G)			
102	10.4	0.061	N/A	0	0.00	0	0.00			
114	49.8	0.291	IIIw	60	17.46	36	10.48			
114	80.4	0.470	IIIw	60	28.20	36	16.92			
115	28.8	0.168	IIIw	60	10.08	68	11.42			
122	1.7	0.010	IIIw	60	0.60	77	0.77			
Totals	171.1	1.000		LCC Total Score	56.34	Storie Index Total Score	39.59			

Total Project 171.2	
Area (acres)=	

<sup>\*</sup> The Soil Map Unit information and acreage were determined from the current soil survey information available at the USDA Natural Resources Conservation Service website: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx (Figure 3).

<sup>\*\*</sup> The Land Capability Classification and Storie Index information was obtained from the current soil survey information available at the USDA Natural Resources Conservation Service website: http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx (Appendix A).

<sup>\*\*\*</sup> The LCC Rating for irrigated land was determined from the LCC Point Rating Table 2 from the LESA Instruction Manual (California Department of Conservation 1997).



Figure 3: Development Area Soils Map

	Site Assessment Worksheet 1						
	Project Size Score*						
	İ	J	K				
	LCC Class I-II	LCC Class III	LCC Class IV-VIII				
Project Acres per LCC Class		49.8					
Project Acres per LCC Class		80.4					
Project Acres per LCC Class		28.8					
Project Acres per LCC Class		1.7					
Total Project Acres per LCC Class	0.0	160.7	0.0				
* Project Size Scores	0	100	0				
Highest Project Size Score	100						

<sup>\*</sup> Project Size Score was determined from the Project Size Scoring Table from the LESA Instruction Manual (California Department of Conservation 1997).

Site Assessment Worksheet 2										
Water Resources Availability										
Α	B C D E									
Project Portion	Water Source	Proportion of Project Area	Water Availability Score*	Weighted Availability Score (C x D)						
1	Irrigation District Only	1.0	100	100						
2										
3										
4										
5										
6										
	(Must Sum to 1.0) Total Water Resource Score									

<sup>\*</sup> The Water Availability Score was determined using the Water Resources Availability Scoring Table from the LESA Instruction Manual (California Department of Conservation 1997).

Site Assessment Worksheet 3									
Surrounding Agricultural Land & Surrounding Protected Resource Land									
Α	В	С	D	E	F	G			
	Zoı	ne of Influenc	e*		Surrounding	Surrounding			
Total Acres	Acres in Agriculture	Acres of Protected Resource Land	Percent in Agriculture (B/A)	Percent Protected Resource Land (C/A)	Agricultural Land Score (From LESA Manual Table 6)	Protected Resource Land Score (From LESA Manual Table 7)**			
1295.8	685	0	52.9	0	30	0			

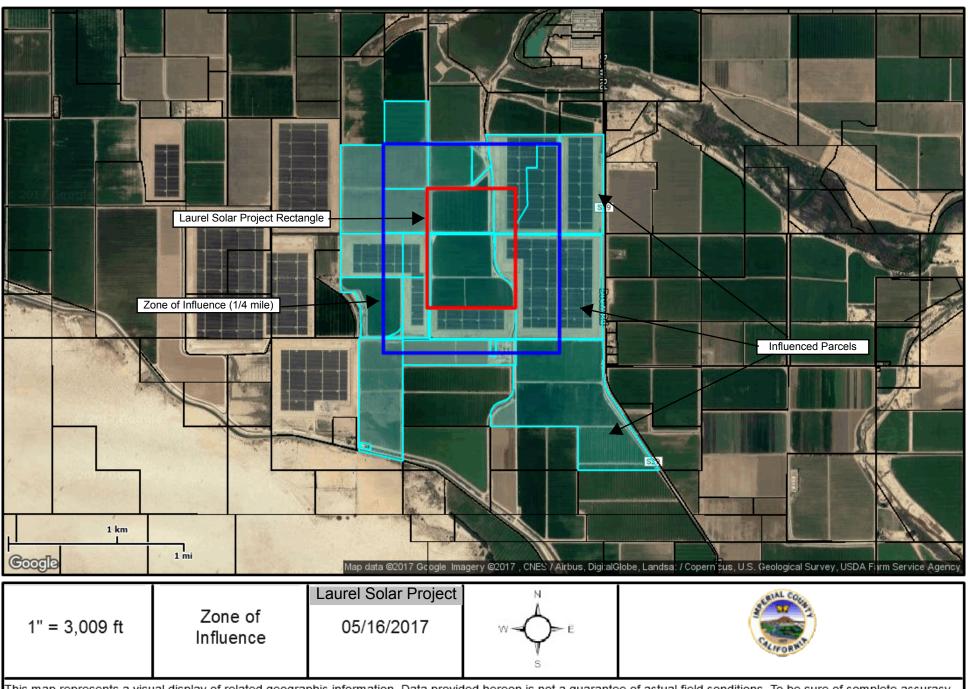
<sup>\*</sup> In conformance with the instructions in the LESA Instruction Manual (California Department of Conservation 1997), the Zone of Influence was determined by drawing the smallest rectangle that could completely encompass the entire Project Area. A second rectangle was then drawn which extended one quarter mile on all sides beyond the first rectangle. The Zone of Influence is represented by the entire area of all parcels with any lands inside the outer rectangle, less the area of the proposed project (Figure 4).

<sup>\*\*</sup> The LESA Instruction Manual (California Department of Conservation 1997) describes *Protected Resource Land* as those lands with long term use restrictions that are compatible with or supportive of agricultural uses of land. Included among them are the following: Williamson Act contracted lands; Publicly owned lands maintained as park, forest, or watershed resources; and Lands with agricultural, wildlife habitat, open space, or other natural resource easements that restrict the conversion of such land to urban or industrial uses.

Surrounding Parcels***	Acres	Protected Resource Land?	Percent Protected Resource Land	Acres in Protected Land	Agricultural Land?	Percent Agricultural Land	Acres of Agriculture
051-310-026	40.2	N	0	0	Y	100	40.2
051-310-027	119.9	N	0	0	Υ	100	119.9
051-310-028	40.0	N	0	0	Υ	100	40.0
051-310-040	89.3	N	0	0	N	0	0.0
051-310-044	4.1	N	0	0	Y	75	3.1
051-310-049	10.6	N	0	0	Υ	60	6.4
051-310-050	42.4	N	0	0	Υ	100	42.4
051-310-056	84.4	N	0	0	N	0	0.0
051-310-063	25.5	N	0	0	N	0	0.0
051-330-024	58.5	N	0	0	Y	80	46.8
051-350-015	105.9	N	0	0	Υ	90	95.3
051-360-001	57.1	N	0	0	N	0	0.0
051-360-002	23.2	N	0	0	N	0	0.0
051-360-003	32.0	N	0	0	N	0	0.0
051-360-004	54.5	N	0	0	N	0	0.0
051-360-018	1.8	N	0	0	Y	100	1.8
051-360-031	243.5	N	0	0	Y	100	243.5
051-360-032	203.7	N	0	0	N	0	0.0
051-360-037	1.9	N	0	0	N	0	0.0
051-360-038	57.5	N	0	0	Y	80	46.0
Total	1295.8		Total	0		Total	685

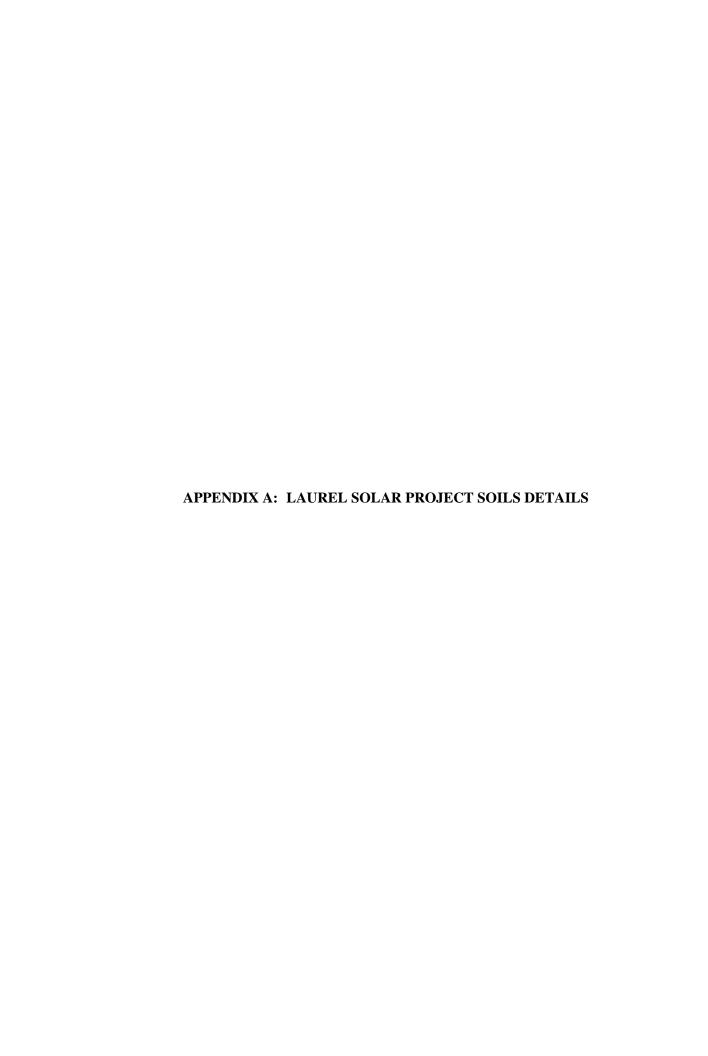
<sup>\*\*\*</sup>The Imperial County Assessors website was accessed to identify the surrounding parcel numbers (http://www.co.imperial.ca.us/assessor/). The percentage of agriculture was determined from a map overlay used to estimate the proportion of land in agriculture and the California Department of Conservation Important Farmland Map Series.

Figure 4: Zone of Influence



This map represents a visual display of related geographic information. Data provided hereon is not a guarantee of actual field conditions. To be sure of complete accuracy, please contact Imperial County staff for the most up-to-date information.

Final LESA Score Sheet					Califor	nia LESA Model Scoring Thresholds	
	Factor Scores	Factor Weight	Weighted Factor Scores		Total LESA Score	Scoring Decision	
LE Factors							
Land Capability Classification	56.34	0.25	14.09		0 to 39 Points	Not Considered Significant	
Storie Index	39.59	0.25	9.90		0 10 39 F011113	Thot Considered Significant	
LE subtotal		0.50	23.98				
SA Factors						Considered Significant only if LE and SA subscores are	
Project Size	100	0.15	15.00		40 10 39 F011113	each greater than or equal to 20 points	
Water Resource Availability	100	0.15	15.00				
Surrounding Agricultural Land	30	0.15	4.50		60 to 79 Points	Considered Significant unless either LE or SA subscore	
Protected Resource Land	0	0.05	0.00		00 10 79 FOILIS	is <u>less</u> than 20 points	
SA Subtotal		0.50	34.50				
		Total LESA Score	58.48		80 to 100 Points	Considered Significant	



#### 102—Badland

#### **Map Unit Setting**

National map unit symbol: h8z8

Mean annual precipitation: 0 to 3 inches

Mean annual air temperature: 72 to 75 degrees F

Frost-free period: 300 to 350 days

Farmland classification: Not prime farmland

#### **Map Unit Composition**

Badland: 85 percent

Minor components: 8 percent

Estimates are based on observations, descriptions, and transects of

the mapunit.

#### **Description of Badland**

#### Setting

Parent material: Alluvium derived from mixed

#### Properties and qualities

Slope: 30 to 75 percent

Depth to restrictive feature: 0 to 4 inches to paralithic bedrock

Runoff class: High

#### Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 8e

Hydric soil rating: No

#### **Minor Components**

#### **Imperial**

Percent of map unit: 2 percent

Hydric soil rating: No

#### Holtville

Percent of map unit: 2 percent

Hydric soil rating: No

#### Meloland

Percent of map unit: 2 percent

Hydric soil rating: No

#### Indio

Percent of map unit: 2 percent

Hydric soil rating: No

# **Data Source Information**

Soil Survey Area: Imperial County, California, Imperial Valley Area

## 114—Imperial silty clay, wet

#### **Map Unit Setting**

National map unit symbol: h8zn Elevation: -230 to 200 feet

Mean annual precipitation: 0 to 3 inches

Mean annual air temperature: 72 to 75 degrees F

Frost-free period: 300 to 350 days

Farmland classification: Farmland of statewide importance

#### **Map Unit Composition**

Imperial, wet, and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of

the mapunit.

#### **Description of Imperial, Wet**

#### Setting

Landform: Basin floors

Landform position (three-dimensional): Talf

Down-slope shape: Linear Across-slope shape: Linear

Parent material: Clayey alluvium derived from mixed and/or clayey

lacustrine deposits derived from mixed

#### Typical profile

H1 - 0 to 12 inches: silty clay H2 - 12 to 60 inches: silty clay loam

#### Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches Natural drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None Frequency of ponding: None

Calcium carbonate, maximum in profile: 5 percent

Salinity, maximum in profile: Slightly saline to moderately saline

(4.0 to 8.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 20.0

Available water storage in profile: Moderate (about 8.3 inches)

#### Interpretive groups

Land capability classification (irrigated): 3w Land capability classification (nonirrigated): 7w

Hydrologic Soil Group: C Hydric soil rating: No

#### **Minor Components**

### Glenbar

Percent of map unit: 4 percent Hydric soil rating: No

#### Meloland

Percent of map unit: 4 percent Hydric soil rating: No

#### Holtville

Percent of map unit: 4 percent Hydric soil rating: No

#### Niland

Percent of map unit: 3 percent Hydric soil rating: No

# **Data Source Information**

Soil Survey Area: Imperial County, California, Imperial Valley Area

## 114—Imperial silty clay, wet

#### **Map Unit Setting**

National map unit symbol: h8zn Elevation: -230 to 200 feet

Mean annual precipitation: 0 to 3 inches

Mean annual air temperature: 72 to 75 degrees F

Frost-free period: 300 to 350 days

Farmland classification: Farmland of statewide importance

#### **Map Unit Composition**

Imperial, wet, and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of

the mapunit.

#### **Description of Imperial, Wet**

#### Setting

Landform: Basin floors

Landform position (three-dimensional): Talf

Down-slope shape: Linear Across-slope shape: Linear

Parent material: Clayey alluvium derived from mixed and/or clayey

lacustrine deposits derived from mixed

#### Typical profile

H1 - 0 to 12 inches: silty clay H2 - 12 to 60 inches: silty clay loam

#### Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches Natural drainage class: Moderately well drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None Frequency of ponding: None

Calcium carbonate, maximum in profile: 5 percent

Salinity, maximum in profile: Slightly saline to moderately saline

(4.0 to 8.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 20.0

Available water storage in profile: Moderate (about 8.3 inches)

#### Interpretive groups

Land capability classification (irrigated): 3w Land capability classification (nonirrigated): 7w

Hydrologic Soil Group: C Hydric soil rating: No

#### **Minor Components**

### Glenbar

Percent of map unit: 4 percent Hydric soil rating: No

#### Meloland

Percent of map unit: 4 percent Hydric soil rating: No

#### Holtville

Percent of map unit: 4 percent Hydric soil rating: No

#### Niland

Percent of map unit: 3 percent Hydric soil rating: No

# **Data Source Information**

Soil Survey Area: Imperial County, California, Imperial Valley Area

# 115—Imperial-Glenbar silty clay loams, wet, 0 to 2 percent slopes

#### **Map Unit Setting**

National map unit symbol: h8zp Elevation: -230 to 200 feet

Mean annual precipitation: 0 to 3 inches

Mean annual air temperature: 72 to 75 degrees F

Frost-free period: 300 to 350 days

Farmland classification: Farmland of statewide importance

#### **Map Unit Composition**

Imperial, wet, and similar soils: 40 percent Glenbar, wet, and similar soils: 40 percent

Minor components: 20 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

#### Description of Imperial, Wet

#### Setting

Landform: Basin floors

Landform position (three-dimensional): Talf

Down-slope shape: Linear Across-slope shape: Linear

Parent material: Clayey alluvium derived from mixed and/or clayey

lacustrine deposits derived from mixed

#### Typical profile

H1 - 0 to 12 inches: silty clay loam H2 - 12 to 60 inches: silty clay loam

#### **Properties and qualities**

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches Natural drainage class: Moderately well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat):

Moderately high (0.20 to 0.57 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None Frequency of ponding: None

Calcium carbonate, maximum in profile: 5 percent

Salinity, maximum in profile: Slightly saline to moderately saline

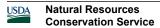
(4.0 to 8.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 20.0

Available water storage in profile: Moderate (about 8.6 inches)

#### Interpretive groups

Land capability classification (irrigated): 3w



Land capability classification (nonirrigated): 7w

Hydrologic Soil Group: C Hydric soil rating: No

#### Description of Glenbar, Wet

#### Setting

Landform: Basin floors

Landform position (three-dimensional): Talf

Down-slope shape: Linear Across-slope shape: Linear

Parent material: Alluvium derived from mixed

#### Typical profile

H1 - 0 to 13 inches: silty clay loam H2 - 13 to 60 inches: clay loam

#### Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches Natural drainage class: Moderately well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat):

Moderately high (0.20 to 0.57 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None Frequency of ponding: None

Calcium carbonate, maximum in profile: 5 percent

Salinity, maximum in profile: Very slightly saline to moderately

saline (2.0 to 8.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 15.0

Available water storage in profile: High (about 10.8 inches)

#### Interpretive groups

Land capability classification (irrigated): 3w Land capability classification (nonirrigated): 7w

Hydrologic Soil Group: C Hydric soil rating: No

#### **Minor Components**

#### Holtville

Percent of map unit: 10 percent

Hydric soil rating: No

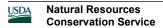
#### Meloland

Percent of map unit: 10 percent

Hydric soil rating: No

#### **Data Source Information**

Soil Survey Area: Imperial County, California, Imperial Valley Area



## 122—Meloland very fine sandy loam, wet

#### **Map Unit Setting**

National map unit symbol: h8zx Elevation: -230 to 200 feet

Mean annual precipitation: 0 to 3 inches

Mean annual air temperature: 72 to 75 degrees F

Frost-free period: 300 to 350 days

Farmland classification: Prime farmland if irrigated and drained

#### **Map Unit Composition**

Meloland, wet, and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of

the mapunit.

#### Description of Meloland, Wet

#### Setting

Landform: Basin floors

Landform position (three-dimensional): Talf

Down-slope shape: Linear Across-slope shape: Linear

Parent material: Alluvium derived from mixed and/or eolian

deposits derived from mixed

#### Typical profile

H1 - 0 to 12 inches: very fine sandy loam

H2 - 12 to 26 inches: stratified loamy fine sand to silt loam

H3 - 26 to 71 inches: clay

#### **Properties and qualities**

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches Natural drainage class: Moderately well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Very

low to moderately low (0.00 to 0.06 in/hr) Depth to water table: More than 80 inches

Frequency of flooding: None Frequency of ponding: None

Calcium carbonate, maximum in profile: 5 percent

Salinity, maximum in profile: Moderately saline to strongly saline

(8.0 to 16.0 mmhos/cm)

Sodium adsorption ratio, maximum in profile: 13.0

Available water storage in profile: Moderate (about 7.8 inches)

#### Interpretive groups

Land capability classification (irrigated): 3w Land capability classification (nonirrigated): 7w Hydrologic Soil Group: D Hydric soil rating: No

#### **Minor Components**

#### Imperial

Percent of map unit: 3 percent

Hydric soil rating: No

#### Indio

Percent of map unit: 3 percent

Hydric soil rating: No

#### Holtville

Percent of map unit: 3 percent

Hydric soil rating: No

#### Glenbar

Percent of map unit: 3 percent

Hydric soil rating: No

#### Vint

Percent of map unit: 3 percent

Hydric soil rating: No

# **Data Source Information**

Soil Survey Area: Imperial County, California, Imperial Valley Area

# California Revised Storie Index (CA)

The Revised Storie Index is a rating system based on soil properties that govern the potential for soil map unit components to be used for irrigated agriculture in California.

The Revised Storie Index assesses the productivity of a soil from the following four characteristics:

- Factor A: degree of soil profile development
- Factor B: texture of the surface layer
- Factor C: steepness of slope
- Factor X: drainage class, landform, erosion class, flooding and ponding frequency and duration, soil pH, soluble salt content as measured by electrical conductivity, and sodium adsorption ratio

Revised Storie Index numerical ratings have been combined into six classes as follows:

- Grade 1: Excellent (81 to 100)
- Grade 2: Good (61 to 80)
- Grade 3: Fair (41 to 60)
- Grade 4: Poor (21 to 40)
- Grade 5: Very poor (11 to 20)
- Grade 6: Nonagricultural (10 or less)

#### Reference:

O'Geen, A.T., Southard, S.B., Southard, R.J. 2008. A Revised Storie Index for Use with Digital Soils Information. University of California Division of Agriculture and Natural Resources. Publication 8355. http://anrcatalog.ucanr.edu/pdf/8335.pdf

# Report—California Revised Storie Index (CA)

California Revised Storie Index (CA)–Imperial County, California, Imperial Valley Area							
Map symbol and soil name	Pct. of map	California Revised Storie Index	(CA)				
	unit	Rating class	Value				
102—Badland							
Badland	85	Not Applicable for Storie Index					
114—Imperial silty clay, wet							
Imperial, WET	85	Grade 4 - Poor	36				
115—Imperial-Glenbar silty clay loams, wet, 0 to 2 percent slopes							
Glenbar, WET	40	Grade 2 - Good	68				
Imperial, WET	40	Grade 3 - Fair	57				

California Revised Storie Index (CA)–Imperial County, California, Imperial Valley Area								
Map symbol and soil name	• •							
	unit	Rating class	Value					
122—Meloland very fine sandy loam, wet								
Meloland, WET	85	Grade 2 - Good	77					

# **Data Source Information**

Soil Survey Area: Imperial County, California, Imperial Valley Area